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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

MAR 19 1993

Mr. Steve O'Neil
Department of Environmental Resources
Bureau of Water Quality
Conshohocken, PA 19428

Dear Steve:

Please note the attached additional information and clarifications in regard to the previously submitted PA DER Environmental Assessment Form for the Boarhead Farms Site.

Please call me at (215) 597-8170 if you have any questions.

Sincerely,

D. Matlock

Dennis Matlock

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: Amendments to the Environmental Assessment Form for Boarhead Farms Superfund Site

DATE: 3-16-93

FROM: Peter Stokely
Environmental Scientist

TO: Steve O'Neil
PA DER, Bureau of Water Quality Management

Dennis Matlock, OSC for the Boarhead Site, requested that I review the subject Environmental Assessment and provide comment relative to my qualifications regarding the wetlands issues. I am familiar with the Boarhead Site and the specific wetlands issues. I offer the following modifications or elaboration on the questions in the environmental assessment.

I. B. Intermittent stream channels do exist on site meandering through the wetland area down gradient from the proposed pond drainage discharge.

II. A. 1. See attached trip reports for a more detailed discussion of wetland function.

II. A. 6. The wetlands at Boarhead are likely perched wetlands occurring in impervious materials on a relatively high plateau. These wetlands probably to capture and slowly release surface water runoff thus contributing to stream flow characteristics.

II. A. 10. The wetlands act to slow down surface water flow causing a stilling affect which will cause sediments and attached pollutants to drop out. This may contribute to improved water quality down gradient.

III. A. 1. Intermittent drainage pathways exist in the wetland area. These generally contain water throughout the year but during droughts may dry up completely.

V. A. 2. Yes, a discharge pipe and small rip-rap spillway.
V. A. 4. b. The impact from the proposed activity will be a temporary increase in volume of discharge.

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SUBJECT: Boarhead Farms Wetlands DATE: 9-1-92

FROM: Peter Stokely
Environmental Scientist (3ES42)

TO: Lisa Nichols
Remedial Project Manager (3HW21)

This memo serves as my report on the wetlands at Boardhead Farms Site in Upper Black Eddy, Bucks County Pa. Accompanying this memo is a mylar overlay to the 12-13-91 contour map of the property. I have delineated on the overlay, wetlands, ponds and streams, and other key landmarks (structures and roads).

Method:

The information contained in this report was gathered from two site visits, June 23, 1992 and July 24, 1992 and from the review of aerial photography from 1975 through 1984 and the Bucks County Soils Survey. During the site visits most of the property was walked and two transects and 6 individual sampling locations were established. The observed site conditions were compared to the aerial photography to determine the nature of the upland and wetland aerial photo signatures. The information gathered from these trips was then used to photo interpret the entire site and prepare the wetlands map.

The wetlands map shows the upland limit of the area I have determined to be transitional to wetlands. I have placed this line at the upper limit of this area because of the difficult nature of the wetlands delineation in this area, and to be protective of the high quality wetlands on the Boarhead Farms property.

Wetlands:

The wetlands at the site are mostly forested wetlands dominated by Red Maple (Acer rubrum) and White Ash (Fraxinus americana). Co-dominates that occur less frequently are Swamp White Oak (Quercus bicolor) on the wetter sites and Grey Birch (Betula lenta) and Shagbark Hickory (Carya ovata) on the drier sites. The understory is composed of Spice Bush (Lindera benzion) and Northern Arrow Wood (Viburnum recognitum) as well as canopy reproduction.

In addition to the forested wetlands which make up the majority of the site, there are several small intermittent streams, three ponds and an area of emergent wetlands (mostly off the property). The emergent wetlands were formed as a result of chemical spills into what once was a forested wetlands area. These chemical spills killed back the forest and allowed the establishment of Common Reed (Phragmities australis) in this area (vegetation damage area).

The wetlands area on the Boarhead Property is characterized by an intricate pattern of hydrologic settings with very little elevation difference between areas. Three topographical settings were identified. Wet depressional settings form the wettest areas(1) and somewhat higher transitional wetlands on "hummocks" (2) are interspersed within a broad saturated soil wetland zone(3).

The wettest of the forested wetlands occur along the southern property boundary and in the scattered depressional pockets throughout the forested wetlands area. Some of the highest hummocks may be considered upland but were too small and irregular in shape to delineate. The majority of the forested wetlands are located on the broad saturated soil zone area and are intermediate in wetness.

The intricate interspersion of micro-topography makes accurate photo delineation of theses wetlands problematic.

Soils:

All of the wetlands on the Boarhead Site occur on Towhee Soils. Towhee Soils are deep, poorly drained nearly level to gently sloping soils. They are listed as hydric soils by the National Technical Committee on Hydric Soils. Available water capacity is high and permeability is slow. The water table generally rises to the surface during wet seasons. Towhee soils are generally either forested or pasture in Bucks Co. because they are too wet or stony for cultivation.

Two slope classes of Towhee soils are mapped on the Boarhead Farms property, A and B slopes. The A slope is virtually level (0-3% slope). These occupy a small portion of the site around the pond located south of the access road and in scattered locations through out the forested area.

The majority of the wetlands are mapped on the gently sloping B slope (3-8 %) soils. This large area of variably sloping soils with intricate micro-topographic features is responsible for the variable hydrology of the wetlands.

Colors of the Towheee soil range from predominantly grey in the depressional settings to approximately 50% grey and 50% orange-yellow mottled at the upper limits of the wetlands.

Soil colors in combination with surface hydrological conditions are the best diagnostic factors in delineating wetlands on the Boarhead Site.

Hydrology:

The depressional settings are the wettest areas and contain standing water for significant periods of time. The water table is at the surface. These areas exhibit blackened leaves, nearly year around soil saturation and other strong evidence of wetland hydrology.

The "hummocks" are the driest areas with no evidence of standing water apparent. These areas are transitional to uplands and generally lie greater than one foot above the seasonal high water table.

The hydrology of remainder of the wetland area is soil saturation only. These areas contain saturated soils for significant periods of time during the growing season but generally do not exhibit the standing water or blackened leaves. The seasonal high water table lies within one foot of the surface.

These micro-topographical differences within the saturated soil area will determine if an area is frequented by standing water or is a somewhat higher area and thus transitional to uplands. Even vehicular rutting will be enough to cause standing water to persist for prolonged periods of time in the saturated soil area.

Wetland Values:

The wetlands at the Boarhead Farms property are valuable components of an overall fairly large and relatively undisturbed forested plateau in northern Bucks County. This portion of the county supports large populations of deer and other woodland wildlife. In addition pasture land and abandoned farmlands add variety to the habitat types in this area. Several State Game Lands are located in the vicinity. This abundance of suitable wildlife habitat in the area ensures that the populations of wildlife are high and thus will likely be present at Boarhead Farms.

At Boarhead Farms, the forested wetlands, open water ponds and emergent marsh areas offer a variety of habitat types.

The open water ponds are a fisheries resource and supply food to higher trophic level organisms. In addition migratory and resident waterfowl (Canada Geese, various ducks) and herons will utilize these ponds.

The emergent marsh formed after the dieback of the forest in this area provides potential habitat and foraging area for species such as muskrat, beaver, various waterfowl, herons, redwing blackbirds and passerine birds. This area may have mitigated the offsite effect of hazardous substance releases because of the landscape position and contaminate absorbing capacity of this wetland.

The forested wetlands provide food and cover to white tail deer, raccoons, grouse, possibly wild turkey, squirrels, woodthrushes, warblers and vieros. The forest canopy provides cover and seed for food and the understory shrubs provide berries for wildlife.

Conclusion:

The wetlands on the Boarhead Farms property are mainly forested and exhibit an intricate pattern of micro-topography. Three topographical settings are evident.

The wettest and most obvious are located in depressional settings and are characterized by standing water and blackened leaves. These areas should be avoided by remedial activity when ever possible.

A large portion of the Boarhead Farms wetlands are saturated only in nature. These areas are characterized by the typical forest type indicated, but do not exhibit the ponded water and blackened leaves. The soils would generally be predominantly grey below the A horizon with some mottling (less than 50% mottles).

The driest end of the wetlands spectrum are vegetatively similar to the other forested wetlands (possibly a few oaks or white pine will be co-dominate) but can be distinguished by the higher "hummock" position and a greater percentage of orange than grey in the soil immediately below the A horizon. These areas would be the preferred location for remedial activities if the wetlands can not be avoided altogether.

I will be glad to schedule additional trips to the site in order to more specifically locate wetlands in regard to proposed remedial activities on site.